


Coding Using Scratch - Grade 5

1) In this lesson you will learn how to have sprites communicate using speech bubbles.

A) Click the new sprite icon.  Choose two sprites from the Sprite Library.

B) Click the new backdrop icon.  Add a new backdrop (background).

C) Click on **sprite 1** in the sprite controls area just below the stage.

D) Add the following coding blocks for sprite 1.

Add Event when space *key pressed*.

Add Motion *go to x: -150 y: 0*.

Add Motion *point in direction 90*.

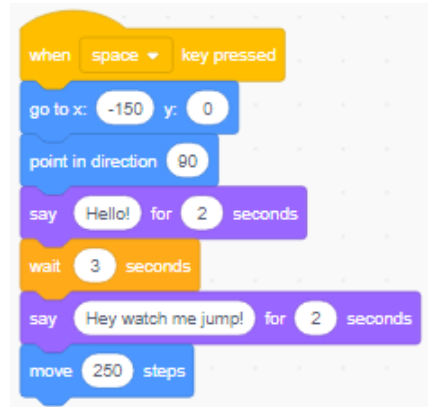
Add Looks block *say Hello for 2 seconds*.

Add Control block *wait 3 seconds*.

Add Looks block *say Hello for 2 seconds*.

Say "Hey watch me jump!".

Add Motion *move 250 steps*.



E) Click on **sprite 2** in the sprite controls area just below the stage.

F) Add the following coding blocks for sprite 2.

Add Event *when space key pressed*.

Add Motion *go to x: -150 y: -100*.

Add Motion *point in direction 90*.

Add Control block *wait for 2 seconds*.

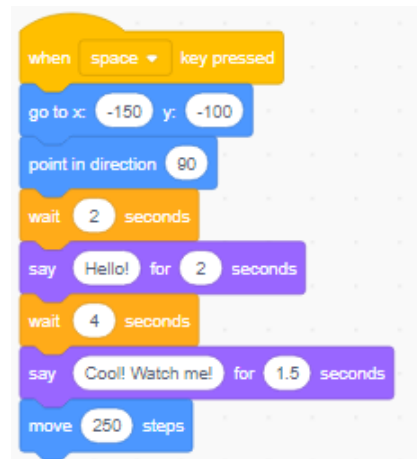
Add Looks block *say Hello for 2 seconds*.

Add Control block *wait 4 seconds*.

Add Looks block *say Hello for 2 seconds*.

Say "Cool! Watch me!" for 1.5 seconds.

Add Motion *move 250 steps*.



G) Press the spacebar on your keyboard to test your program.

Show Mr. Desmond what you have done.

H) Change the program so that your sprites move differently or say something different.

Show Mr. Desmond what you have done.

2) In this lesson you will learn how to add sounds to your programs.

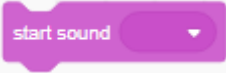
A) Use the same program as you created in lesson one above.

B) Click on **sprite 1** in the sprite control area just below the stage.

C) Detach the Motion block *move 250 steps* from your program.

[Do not get rid of it as you will be using it again soon.]

D) Add Sound block *start sound* ____.

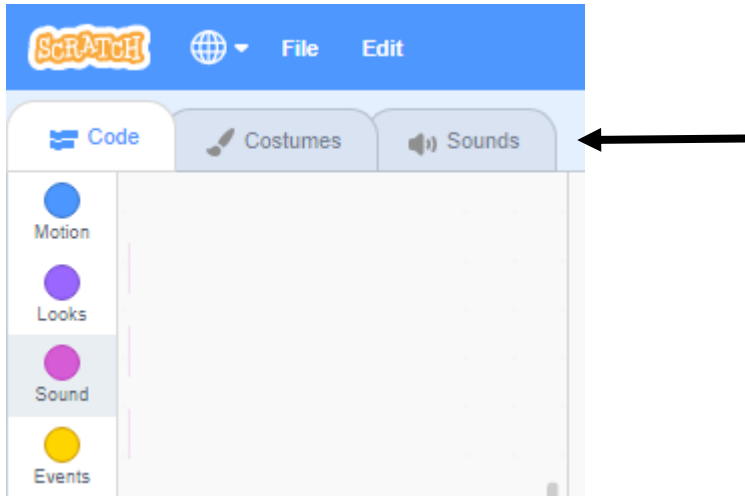


[Each sprite has a unique default sound. Depending on which sprite you chose the default sound will be different.]

Attach this block below the Looks block *say "Hey watch me jump!" for 2 seconds*.

E) Now it is time to learn how to add sounds for your sprite so that your sprite can play different sounds.

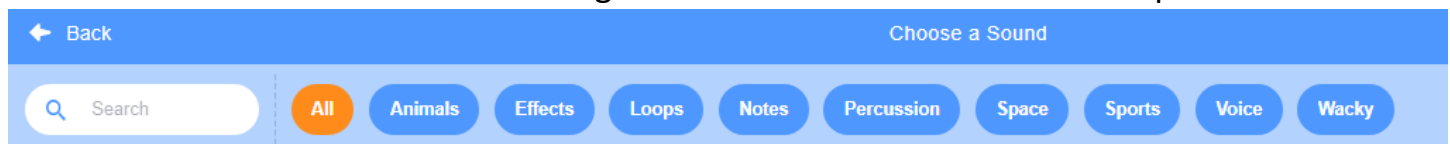
Click the Sounds tab at the top of the Coding Blocks menu.



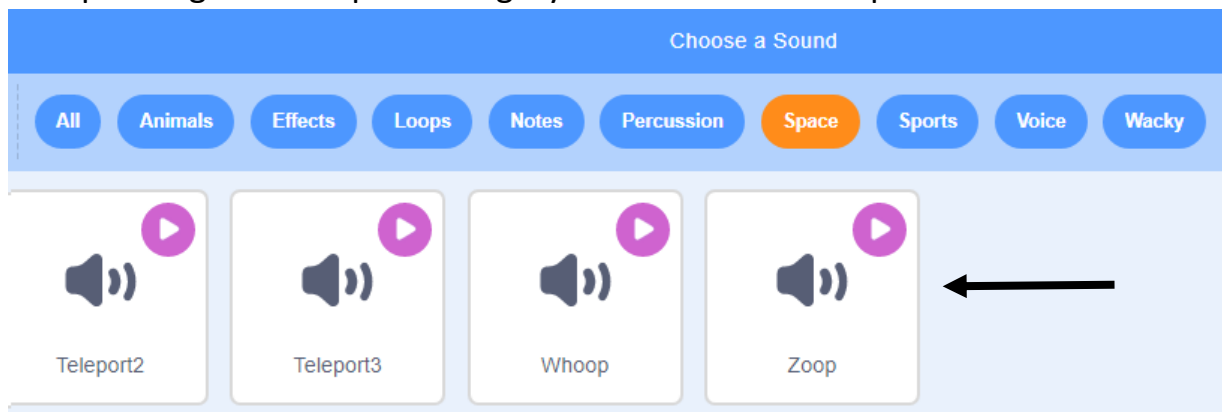
Click the speaker icon to choose a sound from the library.



There are different sound categories. There are lots of sounds to explore.



For sprite 1 go to the Space category and choose the Zoop sound.



An important part of using sounds as part of your program is to not make using sounds a problem.

1 Control the volume. Do not play sounds loudly. Do not disturb others with your sounds.

[Purposefully start with the volume set low to avoid surprises.]

2 Repeating sounds is annoying. Do not click to play sounds repeatedly.

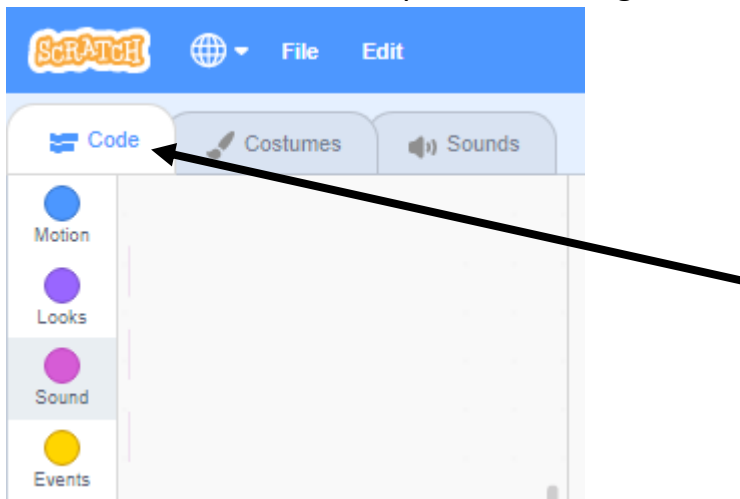
3 Be purposeful. Do not enter the sound library and wander around from sound to sound aimlessly.

Have a plan of what kind of sound you are looking for.

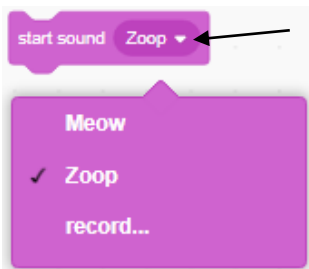
Understand that the sound library in Scratch will not have every sound you want.

F) Now that you have added a sound for your sprite it is time to return to your coding so that you can use that sound as part of your program.

Click the Code tab at the top of the Coding Blocks menu.



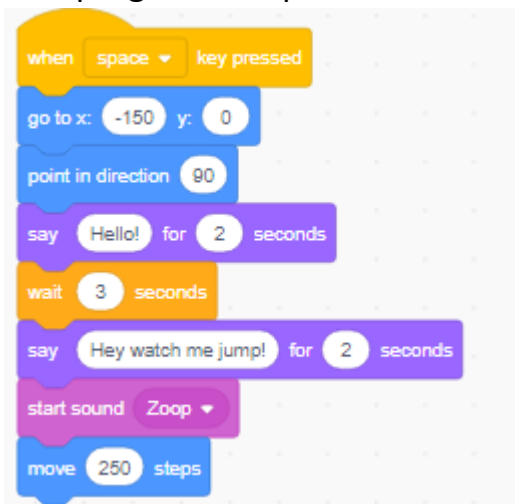
Click the down arrow inside your Sound block *start sound* ____.



Select the Zoop sound from the drop-down menu.

G) Move the Motion block *move 250 steps* and attach it below the Sound block *start sound Zoop*.

H) Your program for sprite 1 should look like this.

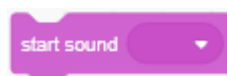


I) Click on **sprite 2** in the sprite control area just below the stage.

J) Detach the Motion block *move 250 steps* from your program.

[Do not get rid of it as you will be using it again soon.]

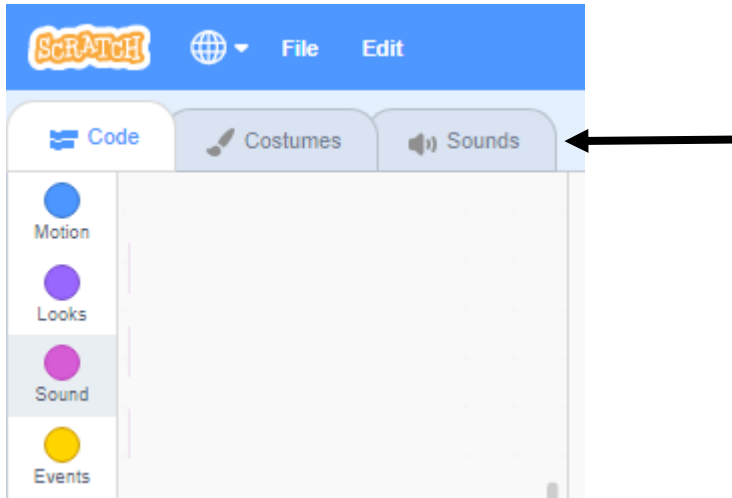
K) Add Sound block *start sound* ____.



Attach this block below the Looks block *say "Cool! Watch me!" for 1.5 seconds.*

L) Now add sounds for sprite 2 so that sprite 2 can play different sounds.

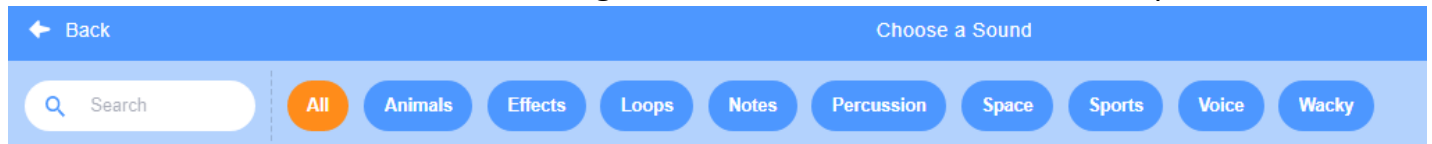
Click the Sounds tab at the top of the Coding Blocks menu.



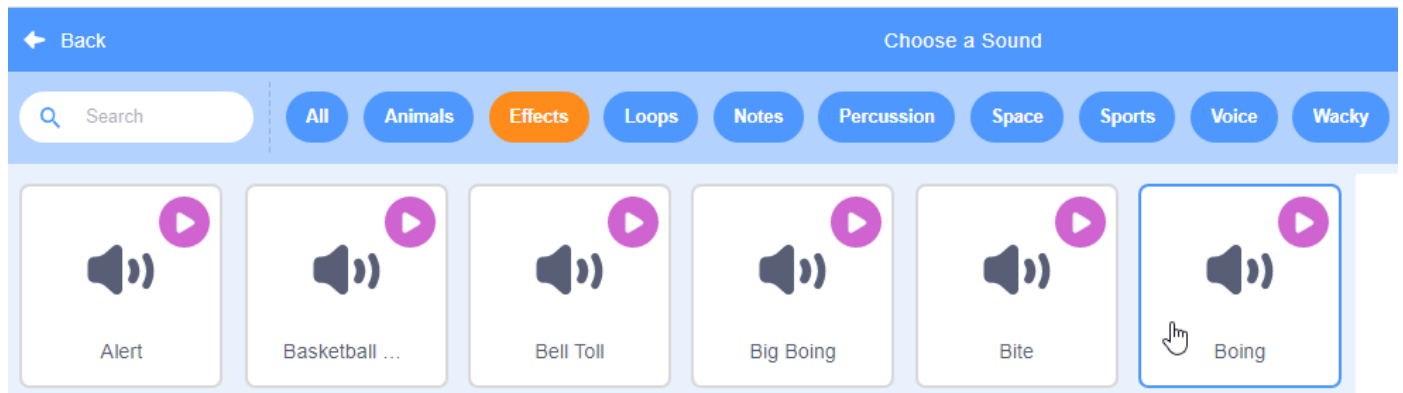
Click the speaker icon to choose a sound from the library.



There are different sound categories. There are lots of sounds to explore.

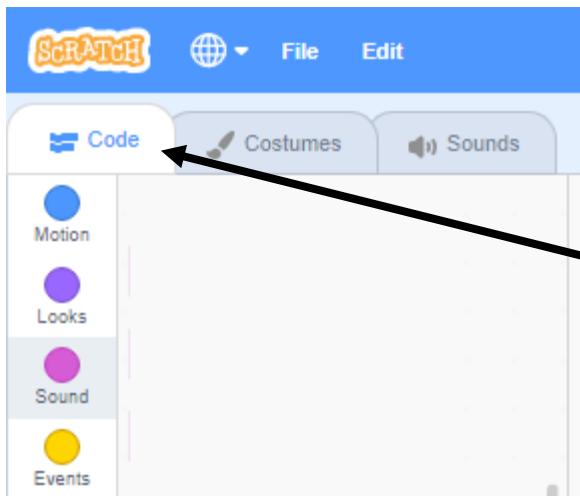


For sprite 2 go to the Effects category and choose the Boing sound.

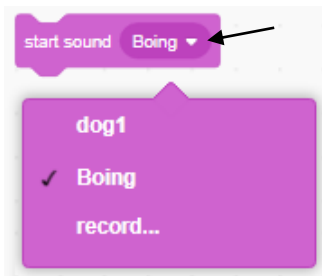


Now that you have added a sound for your sprite it is time to return to your coding so that you can use that sound as part of your program.

Click the Code tab at the top of the Coding Blocks menu.



M) Click the down arrow inside your Sound block *start sound* ____.



Select the Boing sound from the drop-down menu.

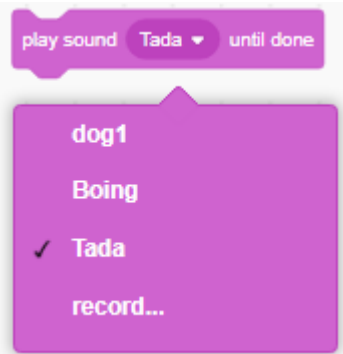
N) Move the Motion block *move 250 steps* and attach it below the Sound block *start sound Boing*.

O) Add Control block *wait 1 seconds*.

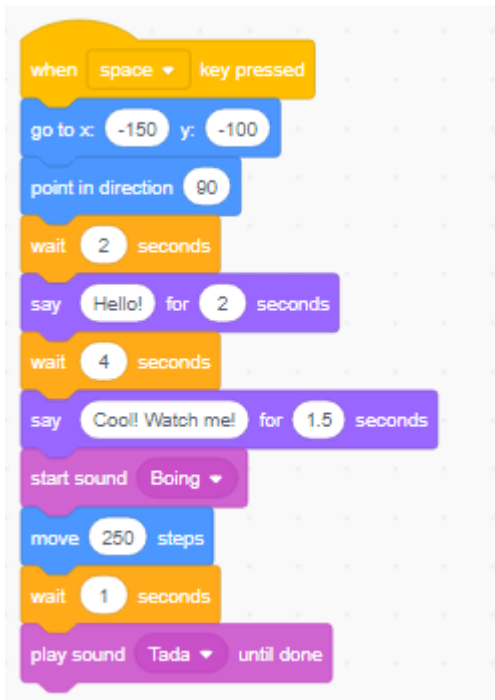
P) Add Sound block *play sound* ____ *until done*.



Q) Go to the Sound library and then to the Effects category and choose the Tada sound.



R) Your program for sprite 2 should look like this.



S) Test your program by pressing the spacebar on your keyboard.

T) Show Mr. Desmond what you have done.

3) In this lesson you will learn how to create simple animations.

A) Click the new sprite icon.

From the Sprite Library select **Avery Walking**.

B) Add Event *when space key pressed*.

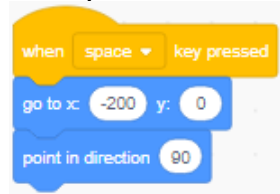
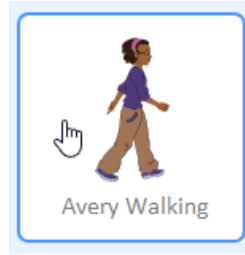
C) Add the following start up blocks.

[Start up blocks are used to get things ready for the action of your program.]

[In this case these blocks set Avery in the correct position before the action begins.]

Add Motion *go to x: -200 y: 0*.

Add Motion *point in direction 90* (right).



D) Add the following action blocks.

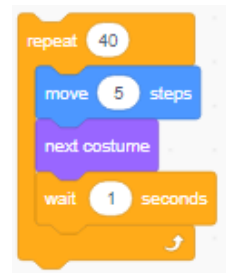
Add Control *repeat 40*. [Attach below *point* block.]

Add the following blocks inside the *repeat 40* block.

Add Motion *move 5 steps*.

Add Looks *next costume*.

Add Control *wait 1 seconds*.



E) Press the spacebar on your keyboard.

What happened to Avery?

Show Mr. Desmond what you have done.

While working with Mr. Desmond open the Costumes tab and discuss with Mr. Desmond how the costumes create the animation effect.

F) Change the Control *wait 1 seconds* to *wait 0.3 seconds*.

Click the spacebar on your keyboard. Describe what happened to Avery.

H) Remove the Control *wait 0.3 seconds* from your program.

Click the spacebar on your keyboard. Describe what happened to Avery.

Explain to Mr. Desmond what happened when you adjusted the wait block in this program.

4) In this lesson you will learn how to make sprites automatically move towards other objects.

A) Click the new sprite icon. From the Sprite Library select a new sprite.

B) Resize your sprite to an appropriate size.

C) Add Event *when space key pressed*.

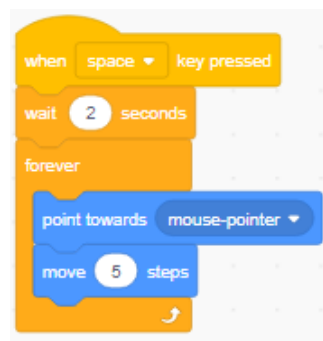
D) Add Control *wait 2 seconds*.

E) Add Control *repeat forever*.

F) Inside the repeat *forever* block add the following blocks.

Add Motion *point towards mouse pointer*.

Add Motion *move 5 steps*.



G) Position the mouse to just in front of the sprite, press the spacebar on the keyboard and then drag the mouse around the program stage.

[If you have completed this properly the sprite should follow wherever the mouse goes.]

Stop your program from running by clicking the **stop** icon at the top of the stage.

H) Show Mr. Desmond what you have done.

5) In this lesson you will learn how to make sprite chase game.

A) Add a new sprite from the Sprite Library and set it as sprite 1. Sprite 1 will be chased. Add a new sprite from the Sprite Library and set it as sprite 2. Sprite 2 will be the chaser. Resize both sprite 1 and sprite 2 to about the size of a nickel.

B) Add a new backdrop from the Backdrop Library.

C) Click on sprite 1 in the sprite control area just below the stage.

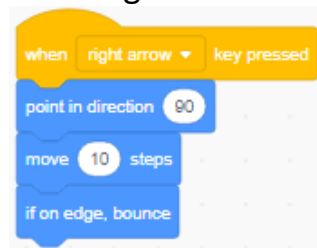
Add Event *when space key pressed*.

Change the Event to *when right arrow key pressed*.

Add Motion *point in direction 90* (right).

Add Motion *move 10 steps*.

Add Motion *If on edge, bounce*.



[The *if on edge, bounce* block will keep your sprite from going off the stage. When a sprite gets to the edge of the stage it hits an invisible wall and bounces away.]

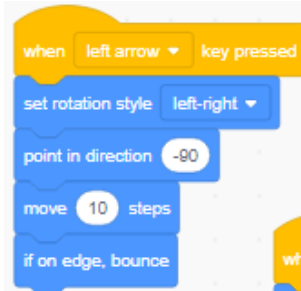
D) Add Event *when left arrow key pressed*.

Add Motion *set rotational style left-right*.

Add Motion *point in direction -90* (left).

Add Motion *move 10 steps*.

Add Motion *If on edge, bounce*.

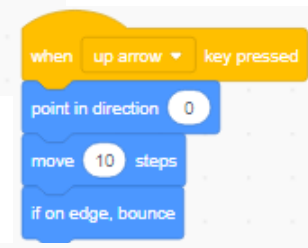


E) Add Event *when up arrow key pressed*.

Add Motion *point in direction 0* (up).

Add Motion *move 10 steps*.

Add Motion *If on edge, bounce*.

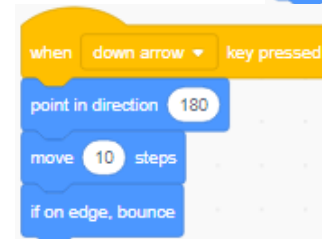


F) Add Event *when down arrow key pressed*.

Add Motion *point in direction 180* (down).

Add Motion *move 10 steps*.

Add Motion *If on edge, bounce*.



G) Click on sprite 2 in the sprite control area just below the stage.

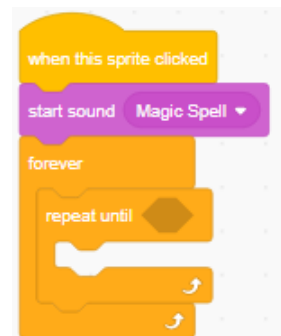
Add Event *when this sprite is clicked*.

Add Sound block *start sound Magic Spell*.

[Go to the Sound Library and then the Effects category.]

Add Control *forever*.

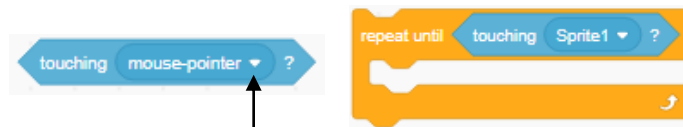
Add Control *repeat until* inside the *forever* block



H) Add Sensing block *touching mouse-pointer* within the *repeat until* block hexagon area.



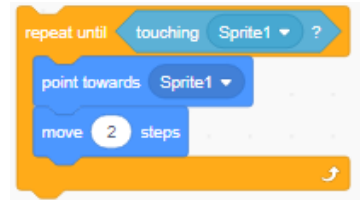
Click the arrow and change the sensing block *touching mouse-pointer* to *Sprite 1*.



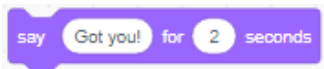
I) Add the following blocks inside the *repeat until* block.

Add Motion *point towards mouse pointer*. Click the arrow and change *point towards mouse pointer* to *Sprite 1*.

Add Motion *move 10 steps*. Change 10 steps to 2 steps.



J) Add Looks block *say "Got you!" for 2 seconds* below the Control block *repeat until*.

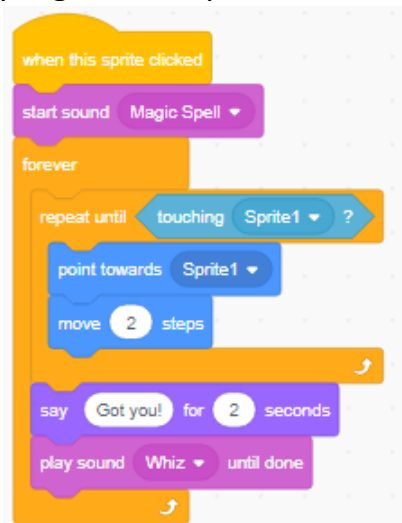


K) Add Sound block *play sound Whiz until done*.

[Go to the Sound Library and then the Wacky category.]



L) Your program for sprite 2 should look like this.



M) Now it is time to test your chase game.

Using the arrow keys (up, down, left, and right) on the keyboard will move sprite 1.

After you click sprite 2 it will chase sprite 1 wherever it goes.

For the fun of it try to keep sprite 1 from being caught by sprite 2.

Stop your program from running by click the stop icon at the top of the stage.

N) Show Mr. Desmond what you have done.

6) In this lesson you will learn how to add images from the internet to your Scratch program.

A) Download a background image from the internet.

Use the Downloading Images document to help you with the steps for this. Ask for assistance if you are still unsure of how to download an image from the internet.

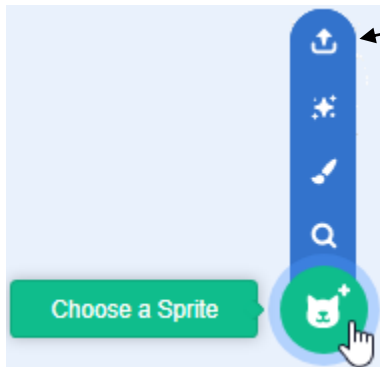
Use search words like backgrounds, forest, ocean, sky, etc. to aid your search.

B) Download two images from the internet for the two characters of a chase game. Recognizing that the stage area is small it will be easiest if you use the smaller size version of the images directly from the search window rather than full size versions.

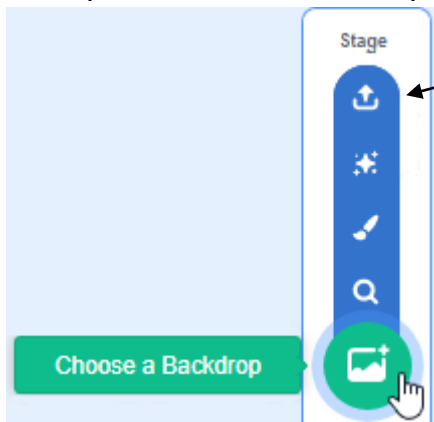
C) Use the same program that you created in lesson five.

You are going to make a new chase program with a new backdrop using the background image you downloaded and your newly downloaded images as sprite 1 and sprite 2.

D) To upload a new sprite from a file on the computer move the mouse onto the sprite icon. An icon bar will pop up. Click on the upload from file icon [the up arrow at the top of the new sprite pop up icon bar].



E) To upload a new backdrop from a file on the computer move the mouse onto the backdrop icon. An icon bar will pop up. Click on the upload from file icon [the up arrow at the top of the new backdrop pop up icon bar].



G) Complete the chase program with your own images that you downloaded from the internet and show Mr. Desmond what you have done.